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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,039	03/11/2004	Barton A. Thomson	8221	4960

7590 03/23/2007  
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EXAMINER
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YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,039	<b>Applicant(s)</b> THOMSON ET AL.	
	<b>Examiner</b> Deborah Yee	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 to 18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Election/Restrictions***

2. Claims 19 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 9, 2006.

### ***Claim Objections***

3. Claims 16 and 18 are objected to because of the following informalities:
4. There is a typo-error on line 1 of claim 16 where in "step (d)" should be --step (f)--.
5. There is a typo-error on line 2 of claim 18 wherein "step ( c )" should be --step (e)--..
6. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 to 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornelissen et al (US Patent 6,280,542) alone or in view of Crowther et al publication submitted by applicant in IDS dated March 10, 2005..

9. US Patent '542 in claim 1 of columns 13-14 discloses a steel strip processed in substantially the same manner as claimed by applicant comprising the steps of continuous casting molten steel into a thin slab, hot charging the as-cast thin slab into a furnace without first cooling the as-cast product to ambient temperature and homogenizing at austenitic temperature range, conducting a rough reduction step in the first rolling apparatus to reduce the thickness of the as-cast steel slab, holding the rough-reduced product in the austenitic temperature range, transferring the rough-reduced product to a second rolling apparatus, conducting a final reduction step in the austenitic temperature range, and cooling down to ferritic temperature range.

10. Even though prior art does not teach conducting a final reduction step in the second rolling apparatus to reduce the thickness of the rough-reduced product by a second amount, thereby producing a hot rolled steel product, wherein the second amount of thickness reduction is less than the first mount produced in the first rolling apparatus as recited by claim 1, such would not be a patentable difference since it would be a matter of routine optimization well within the skill of the artisan to determine reduction rates, and productive of no new and unexpected results. Same rejection applies to claims 5 and 6 reciting specific rolling reduction rates.

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11. Prior art process in claim 18 and lines 60 to 68 in column 4 discloses an austenitic temperature to be in the range of 1050 to 1200C and preferably 1110 to 1200 C, and would suggest the 1020 to 1150C recited by claim 18 (the temperature range above the recrystallization stop temperature of the austenite), and within the 1050C recited by claim 9 ( the temperature above the precipitation temperature).
12. Prior art on lines 12-22 in column 4 discloses the thickness of the as-cast steel product between 40 and 100mm and preferably 60-80mm, and would suggest the 30 to 200mm recited by claim 3 and within the 50 to 80 mm recited by claim 4.
13. Prior art on lines 38 to 42 in column 5 discloses a final thickness at less than 1.2 mm and preferably less than 0.9 mm, and would overlap and closely suggest the 1 to 2 mm recited by claim 7 and 1 to 2mm recited by claim 8.
14. Prior art on lines 17 to 23 in column 6 discloses using a high strength steel and TRIP – steels, which would include micro-alloy steel containing V and N as recited by claim 9. Moreover, it is well known in the art to conduct thin slab direct rolling process with V micro-alloyed steels as shown in Crowther publication; and hence would be obvious to incorporate to the prior art process which is also a thin slab direct rolling process.
15. The yield strength and n-values recited by claims 10 would be expected in the prior art flat rolled finished steel product since the process of making is essentially the same as present invention, and in absence of proof to the contrary.
16. With regard to claims 13 to 16, note the prior art figure 1 discloses a first rolling apparatus comprising a rougher, the second rolling apparatus comprising a rolling mill

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with a plurality of rolling stands, and a heated-run-off table from the first rolling apparatus to the second rolling apparatus.


17. Even though a holding time from 15 to 25 seconds to complete recrystallization in at least 90% of austenite grains within the rough-reduce product having a grain size within the range of 100 to 400 microns for step (e) as recited by claim 17 is not taught by prior art, such limitations would be suggested. Note prior art process on lines 26 to 34 in column 10 discloses holding the roughen steel strip in an thermal apparatus in order to heat and maintain steel at austenitic temperature before conducting final reduction step in the second rolling apparatus. The prior art austenitic temperature range of 1110 to 1200C is within the present invention utilized temperature of 1020 to 1150C; hence recrystallization would occur. Moreover, prior art process maintains steel for a time period to completely austenitize steel which is the same goal as present invention, and thus the claimed time range of 15 to 25 seconds would be expected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-27211253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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